

B₁
1 the operating system wielding, at increasingly critical memory thresholds,
2 [wielding] correspondingly increasing [operating system] control over said one or
3 more application programs to reduce memory usage.

4
5 2. (Previously Amended) A method as recited in claim 1, wherein the
6 wielding increasing operating system control comprises:

7 at a less critical memory threshold, communicating a request to at least one
8 of the application programs for the at least one application program to limit its use
9 of memory; and

10 at a more critical memory threshold, terminating at least one of the
11 application programs without allowing its further execution.

12
13 3. (Previously Amended) A method as recited in claim 1, wherein the
14 wielding increasing operating system control comprises:

15 prompting a user to select at least one of the application programs and then
16 the operating system requesting that the at least one selected application program
17 close itself.

18
19 4. (Previously Amended) A method as recited in claim 1, wherein the
20 wielding increasing operating system control comprises:

21 prompting a user to select at least one of the application programs and then
22 terminating it without allowing its further execution.

23
24 5. (Previously Amended) A method as recited in claim 1, wherein the
25 wielding increasing operating system control comprises:

1 at a first memory threshold, requesting at least one of the application
2 programs to limit its use of memory;

3 at a second memory threshold, requesting at least one of the application
4 programs to close itself; and

5 at a third memory threshold, terminating at least one of the application
6 programs without allowing its further execution.

7
8 6. (Twice Amended) A method as recited in claim 1, wherein the
9 wielding increasing operating system control comprises:

10 at a first memory threshold, requesting at least one of the application
11 programs to limit its use of memory;

12 at a second memory threshold, prompting a user to [designate] select at
13 least one of the application programs and then requesting it to close itself; and

14 at a third memory threshold, prompting the user to [designate] select at
15 least one of the application programs and then terminating it without allowing its
16 further execution.

17
18 7. (Previously Amended) A method as recited in claim 1, further
19 comprising:

20 at one or more of the memory thresholds, reclaiming unused stack memory.

21
22 8. (Previously Amended) A method as recited in claim 1, further
23 comprising:

24 at one or more of the memory thresholds, discarding read-only memory.
25

1 9. (Previously Amended) A computer-readable storage medium having
2 computer-executable instructions for performing the method recited in claim 1.

3
4 10. (Previously Amended) A computer-readable storage medium having
5 instructions for controlling memory usage in a computer system having limited
6 physical memory, wherein one or more application programs execute in
7 conjunction with an operating system, the instructions being executable by the
8 computer system to perform acts comprising:

9 at a first memory usage threshold, requesting at least one of the application
10 programs to close itself; and

11 at a second memory usage threshold that is more critical than the first
12 memory usage threshold, terminating at least one of the application programs
13 without allowing its further execution.

14
15 11. (Previously Amended) A computer-readable storage medium as
16 recited in claim 10, the instructions being executable to perform additional acts
17 comprising:

18 before performing the requesting step, prompting a user to select one of the
19 application programs to be closed; and

20 before performing the terminating step, prompting the user to select one of
21 the application programs to be terminated.

22
23 12. (Previously Amended) A computer-readable storage medium as
24 recited in claim 10, the instructions being executable to perform additional acts
25 comprising:

1 before performing the requesting step, requiring a user to select one of the
2 application programs to be closed; and

3 before performing the terminating step, requiring the user to select one of
4 the application programs to be terminated.

5
6 13. (Previously Amended) A computer-readable storage medium as
7 recited in claim 10, the instructions being executable to perform an additional act
8 comprising:

9 at a further memory threshold that is less critical than the first and second
10 memory usage thresholds, requesting at least one of the application programs to
11 limit its use of memory.

12
13 14. (Previously Amended) A computer-readable storage medium as
14 recited in claim 10, the instructions being executable to perform an additional act
15 comprising:

16 reclaiming unused stack memory before requesting at least one of the
17 application programs to close itself and before terminating at least one of the
18 application programs.

19
20 15. (Previously Amended) A computer-readable storage medium as
21 recited in claim 10, the instructions being executable to perform an additional act
22 comprising:

23 discarding read-only memory before requesting at least one of the
24 application programs to close itself and before terminating at least one of the
25 application programs.

1
2 16. (Previously Amended) A computer-readable storage medium as
3 recited in claim 10, the instructions being executable to perform additional acts
4 comprising:

5 reclaiming unused stack memory and discarding read-only memory before
6 requesting at least one of the application programs to close itself and before
7 terminating at least one of the application programs.

8
9 17. (Previously Amended) A method of controlling memory usage in a
10 computer system having limited physical memory, wherein one or more
11 application programs execute in conjunction with an operating system, the method
12 comprising:

13 at a first memory usage threshold, requesting at least one of the application
14 programs to limit its use of memory;

15 at a second memory usage threshold that is more critical than the first
16 memory usage threshold, requesting at least one of the application programs to
17 close itself;

18 at a third memory usage threshold that is more critical than the first and
19 second memory usage thresholds, terminating at least one of the application
20 programs without allowing its further execution; and

21 reclaiming unused stack memory and discarding read-only memory before
22 requesting at least one of the application programs to close itself and before
23 terminating at least one of the application programs.
24
25

1 18. (Previously Amended) A method as recited in claim 17, wherein the
2 reclaiming and discarding are performed at further memory usage thresholds that
3 are set in relation to the second and third memory usage thresholds.
4

5 19. (Previously Amended) A method as recited in claim 17, wherein the
6 reclaiming and discarding are performed at further memory usage thresholds that
7 are set in relation to the first, second, and third memory usage thresholds.
8

9 20. (Previously Amended) A method as recited in claim 17, further
10 comprising:

11 before performing the requesting, prompting a user to select one of the
12 application programs to be closed; and

13 before performing the terminating, prompting the user to select one of the
14 application programs to be terminated.
15

16 21. (Previously Amended) A method as recited in claim 17, further
17 comprising:

18 before performing the requesting, requiring a user to select one of the
19 application programs to be closed; and

20 before performing the terminating, requiring the user to select one of the
21 application programs to be terminated.
22

23 22. (Previously Amended) A computer-readable storage medium having
24 computer-executable instructions for performing the method recited in claim 17.
25

1 23. (Previously Amended) A computer system comprising:
2 a processor;
3 an operating system that is executable by the processor and that utilizes the
4 physical memory;
5 a virtual memory system that includes physical memory but does not
6 include secondary storage;
7 one or more application programs that utilize the virtual memory system;
8 wherein the operating system is configured to perform the following acts:
9 monitoring physical memory usage; and
10 at increasingly critical physical memory usage thresholds, wielding
11 increasing control over said one or more application programs to reduce
12 physical memory usage.

13
14 24. (Previously Amended) A computer system as recited in claim 23,
15 wherein the act of wielding increasing control comprises the following acts:
16 at a less critical memory threshold, communicating a request to at least one
17 of the application programs for the at least one application program to limit its use
18 of memory; and
19 at a more critical memory threshold, terminating at least one of the
20 application programs without allowing its further execution.

21
22 25. (Previously Amended) A computer system as recited in claim 23,
23 wherein the act of wielding increasing control comprises the following act:
24
25

1 prompting a user to select at least one of the application programs and then
2 the operating system requesting that the at least one selected application program
3 close itself.
4

5 26. (Previously Amended) A computer system as recited in claim 23,
6 wherein the act of wielding increasing control comprises the following act:

7 prompting a user to select at least one of the application programs and then
8 terminating it without allowing its further execution.
9

10 27. (Previously Amended) A computer system as recited in claim 23,
11 wherein the act of wielding increasing control comprises the following acts :

12 at a first memory threshold, requesting at least one of the application
13 programs to limit its use of memory;

14 at a second memory threshold, requesting at least one of the application
15 programs to close itself; and

16 at a third memory threshold, terminating at least one of the application
17 programs without allowing its further execution.
18

19 28. (Twice Amended) A computer system as recited in claim 23,
20 wherein the act of wielding increasing control comprises the following acts:

21 at a first memory threshold, requesting at least one of the application
22 programs to limit its use of memory;

23 at a second memory threshold, prompting a user to [designate] select at
24 least one of the application programs and then requesting it to close itself; and
25

B
3
1 at a third memory threshold, prompting the user to [designate] select at
2 least one of the application programs and then terminating it without allowing its
3 further execution.

4
5 29. (Previously Amended) A computer system as recited in claim 23,
6 wherein the operating system is further configured to perform the following
7 additional act:

8 at one or more of the memory thresholds, reclaiming unused stack memory.
9

10 30. (Previously Amended) A computer system as recited in claim 23,
11 wherein the operating system is further configured to perform the following
12 additional act:

13 at one or more of the memory thresholds, discarding read-only memory.
14

15 31. (Previously Amended) A computer system as recited in claim 23,
16 wherein the act of wielding increasing control comprises the following acts:

17 at a first memory threshold, requesting at least one of the application
18 programs to limit its use of memory;

19 at a second memory threshold, prompting a user to select at least one of the
20 application programs and then requesting that the at least one selected application
21 program close itself;

22 at a third memory threshold, prompting the user to select at least one of the
23 application programs and then terminating it without allowing its further
24 execution; and
25

1 before prompting the user, reclaiming unused stack memory and discarding
2 read-only memory.

3
4 32. (Previously Amended) A method of controlling memory usage in a
5 computer system having limited physical memory, wherein one or more
6 application programs execute in conjunction with an operating system, the method
7 comprising:

8 monitoring memory usage; and

9 when memory usage is high, sending a message from the operating system
10 to at least one of the application programs requesting the application program to
11 reduce its current use of memory.

12
13 33. (Previously Amended) A method as recited in claim 32, further
14 comprising sending the message to the application program when memory usage
15 reaches a defined threshold.

16
17 34. (Previously Amended) A method as recited in claim 32, wherein the
18 application programs have respective message loops, the method further
19 comprising sending the message to the application program through its message
20 loop.

21
22 35. (Previously Amended) A method as recited in claim 32, wherein the
23 application programs have respective message loops, the method further
24 comprising sending the message to a particular application program that was least
25 recently active.

1
2 36. (Previously Amended) A computer-readable storage medium having
3 computer-executable instructions for performing the method recited in claim 32.
4

5 37. (Previously Amended) A computer-readable storage medium having
6 instructions for controlling memory usage in a computer system having limited
7 physical memory, wherein one or more application programs execute in
8 conjunction with an operating system, the instructions being executable by the
9 computer system to perform acts comprising:

10 monitoring memory usage; and

11 at a defined memory usage threshold, sending a message from the operating
12 system to at least one of the application programs requesting the application
13 program to reduce its current use of memory.
14

15 38. (Previously Amended) A computer-readable storage medium as
16 recited in claim 37, wherein the application programs have respective message
17 loops, the instructions being executable to perform a further act of sending the
18 message to the application program through its message loop.
19

20 39. (Previously Amended) A computer-readable storage medium as
21 recited in claim 37, wherein the application programs have respective message
22 loops, the instructions being executable to perform a further act of sending the
23 message to a particular application program that was least recently active.
24
25

1 40. (Previously Amended) An application program that resides in a
2 computer-readable memory for execution by a processor in conjunction with an
3 operating system, the application program having a message loop that receives
4 messages from an operating system, the application program being responsive to a
5 particular message received through its message loop to reduce its current use of
6 memory.